Questions and Further Clarifications to ACC Needed for Asbestos Use in the Chloralkali Industry

Please respond to all questions for each plant location within a company's facility. EPA plans to contact each company directly, as needed.

Receipt of Asbestos

1. What kind of container is the raw asbestos imported in? Is the information in the "Supply Chain" section of "Enclosure B" of ACC's submission correct for all asbestos that enters the country for use in the chlor-alkali industry? A picture of the shipping container, pallets, and plastic-wrapped bags was included. Is this applicable for all ACC participating facilities?

2. Do shipping containers ever require a customs inspection that would open the containers?

3. If a shipping container is damaged, what warning is available to the port or warehouse personnel? Does the warehouse belong to the facility or a third-party?

4. How is the raw asbestos contained within the shipping container? Information ACC provided mentions 40 kg bags and the picture appears to show heavy-duty paper bags. Is this applicable for all of the ACC participating facilities?

5. How is material transported to the chlor-alkali facility?

Fabrication of Diaphragm

6. How are the asbestos bags transported from inside the shipping container to a storage room (what devices, processes, equipment, etc.)?

   The ACC's "Enclosure B" document states, "when moving chrysotile asbestos to its storage location, care should be taken to ensure bags are not punctured." The May 12th "Response to Questions" document states that CI Pamphlet 137 (Guidelines: Asbestos Handling for the Chlor-Alkali Industry) is followed. Neither document states clearly how this is done; for example, Section 4.3 (Receiving) of CI Pamphlet simply states, "when moving asbestos to storage, it is important to prevent puncturing of the bags." In addition, the May 12th letter acknowledges "slight differences between the practices at chlor-alkali plants." It is reasonable to presume sites use forklifts with the bags on pallets.? Please confirm this for all ACC participating sites. How is an accident cleaned and asbestos disposed, including containers and storage areas?

7. How is a broken bag cleaned up and disposed of? Once the shipping container is opened, how often is a broken bag present? Is the entire content disposed? Describe the cleanup procedure for each facility.

8. How are the asbestos storage areas ventilated (e.g. under negative pressure) and is the

ventilation monitored with alarms? What other storage processes are in place? EPA staff understood this to be the case for the chlor-alkali plants visited, but is this the case for all chlor-alkali plants operated by ACC members?

9. How are the bags opened? Specifically, are they moved into a glove box (in all cases) before opening?

   ACC's "Enclosure B" document states, "*Chrysotile asbestos is only removed from the secure storage area when it is needed for the diaphragm preparation process. The required bags of asbestos are moved to a designated area with limited access. The bags selected to be opened are placed in a glove box or hood prior to being opened.*" During a site visit, EPA observed a facility where the bags are carried up to an enclosed room via conveyor and are slit open, contents dropped to the mixing vessel with minimal manual handling. Please provide the breakdown of how each facility handles bags prior to charging asbestos into the mixing vessel and any tools used to cut open the bag. Please include information on any relevant engineering controls.

10. If bags are not opened in a glove box, are they opened in an area with ventilation designed for that purpose? If yes, please explain. What tools do they use? Describe the work process to cut open the bags.

11. Are glove boxes pre-fitted with HEPA vacuum wands for cleaning bag surfaces?

    ACC provided information which stated, "when only partial contents of a bag are required, the partially filled bag is stored within the glove box. If partially filled bags must be moved outside the glove box, they are resealed and HEPA filter equipment-vacuumed before they are moved." Please confirm that this is applicable for all ACC-member sites.

12. How are empty bags handled at every site?

13. Regarding the wet asbestos in and around the mixing (or deposition) tanks that is removed before it dries, how quickly does it dry? What equipment is used to clean it up? How is that equipment managed? Is an SOP available for cleaning?

14. What asbestos control processes are used in the diaphragm drying area and baking oven/oven room? Ventilation? Cleaning SOP? Dried slurry could become friable (meaning it can be crumbled, pulverized, or reduced to powder by hand pressure) until at least baking is well underway and there may be substantial handling and movement during this period.

Operations/Use of Diaphragm

15. How much asbestos coating is removed during the operating life of a diaphragm? What happens to the asbestos coating removed during operation? How is this monitored/measured? Are there separate waste streams? (this refers to "Handling of Wastes and Effluent" section")

Handling of Spent Diaphragms

16. How many sites use the hydroblasting process to remove asbestos from diaphragms, and how many sites dispose of the entire diaphragms without hydroblasting? Are there any other practices? Please provide the SOP of the removal process for each site.

17. How is water from processes other than hydroblasting managed (e.g., from slurry de-watering, wet process cleaning)? Is it the same as hydroblasting?

18. Is the hydroblasting area contained? What measures are in place to ensure that all asbestos wastes generated during the hydroblasting are captured?

19. Is the spent diaphragm dry or wet before hydroblasting?

20. Is hydroblasting and exact work practices consistent across all sites?

21. Do personnel perform the hydroblasting or is it completely automated? Do personnel ever enter the hydroblasting room? If yes, do they allow time between hydroblasting and entering the room? How is the hydroblasting room cleaned after use?

Breathing Zone and Environmental Monitoring

22. Please provide more details for the monitoring information submitted in March (Enclosure C) and May (Attachment 7) including: description of job tasks/titles, number of workers, number of sites, ranges of values collected per site. For short term limit data, please provide the time duration for each task and the 8-hr time weighted average for each sample. Please provide on a per-site basis and clarify that the information provided represents all measured values and includes all job titles of employees who may be exposed to asbestos.

23. Please provide area air monitoring results for any (or all) steps in the asbestos use process.

Handling of Wastes and Effluent

24. Does the facility monitor for asbestos in effluents from hydroblasting diaphragms?

25. Is 100% of the water and wetted asbestos (effluent) captured and sealed as waste? Or does any liquid from the hydroblasting process go down a drain? Please answer for each facility.

26. If any effluent goes down a drain, where does the drain lead and (how) is it treated before leaving the site? Is the facility an indirect discharger or direct discharger? If indirect discharger, does the facility have a pretreatment program? Describe any onsite treatment methods how settled solids and/or biosolids are handled for each facility.

27. How are ventilation systems serving asbestos handling areas maintained? How is ventilated air

containing asbestos handled? Describe air pollution control devices and how captured asbestos/dust/particulates are handled. For example, if filters are used – what types, how are they inspected, cleaned and serviced? Are the filters recharged or discarded/changed-out?

28. How are the spent diaphragms and/or ventilation system filters disposed for each separate facility?

29. What is the facility's National Pollutant Discharge Elimination System (NPDES) permit number(s), Title V air permit number(s), and Resource Conservation and Recovery Act (RCRA) identification number? What is the status of each permit (e.g., active, expired)?

30. How are asbestos containing wastes managed/stored on site until it is sent off site for each of the chlor-alkali facilities? What procedure is in place to ensure that asbestos waste is clearly labeled and sealed to prevent exposure and release?

31. How is portable equipment which may come in contact with asbestos, such as pumps and vacuums, labeled and maintained?

Housekeeping and Hygiene

32. Does all work at all of the facilities involving asbestos occur in restricted areas? Or do employees without asbestos duties have access to some areas where asbestos is used in the process? If yes, please explain.

33. If dry asbestos cleanup is by HEPA vacuum, how is the vacuum cleaned and its bag/filter media handled? Where does this take place? What precautions or controls are used? Is an SOP available?

34. Please describe the process and equipment used to clean-up loose (inadvertently released or spilled) asbestos using wet methods. How is water applied? Is the water amended? If water is sprayed, what pressure and volume is used?

35. Wet filter press cakes are manually dropped into super sacks; does a super sack hold more than one filter press cake? If so, what exposure control methods are used as new cakes are dropped onto cakes already drying in the sack? What cleaning in and around the filter area is required and how is that accomplished?

36. What are the standards for cleanliness in storage, work areas, and hygiene/change rooms; how is cleanliness determined? Are there SOPs for maintaining and inspecting these areas?

37. How are employee change rooms designed to maintain integrity of clean areas and clean clothes?

38. What procedures do personnel use to decontaminate their PPE and equipment?

39. How is the asbestos removed from PPE disposed?

Training

40. Are there initial training courses and refresher training courses for working with asbestos? What specific information is included in each training course and are there requirements for the refresher training (i.e., employees cannot work with asbestos unless completed)? Is training provided for procedures required in case of accidental spills or releases?

Other

41. Enclosure C from the March 15, 2017 ACC letter provides information on pg. 8 for 9 of 10 sites. Please provide data for the 10th site. Please clarify which of the 10 listed sites have multiple chloralkali plants.